Janoschek receives Wolfram-Prandl Prize

November 6, 2014

Marc Janoschek of Condensed Matter and Magnet Science (MPA-CMMS) received the 2014 Wolfram-Prandl Prize during the German Conference for Research with Synchrotron Radiation, Neutrons and Ion Beams at Large Facilities in Bonn, Germany. He was honored for “his pioneering studies of the spin dynamics in chiral helimagnets and the development of a cryogen-free apparatus for spherical neutron polarimetry.”

Janoschek’s achievements

Janoschek was honored for his innovative neutron scattering experiments on the microscopic magnetic interactions that determine the functional properties of helical magnets. Part of this research was performed using a novel device called MuPAD (Mu-Metal Polarization Analysis Device) that Janoschek designed and built during his thesis. MuPAD enables the study of magnetic structures and interactions in unprecedented detail. A total of three MuPADs are currently employed at two European neutron

scattering centers (Paul Scherrer Institut, Switzerland and the Heinz Maier-Leibnitz Zentrum, Germany), and their successful use to answer outstanding scientific questions has been reported in 15 peer-reviewed publications.

Janoschek's work on helical magnets has potential for novel memory, computing, and sensing applications. He will continue his research on this topic as the principal investigator of a Laboratory Directed Research and Development (LDRD) project at Los Alamos. This project focuses on optimizing these materials for applications of designed and controlled functionality to support the Laboratory's Materials for the Future science pillar.

Janoschek performed his doctoral studies in solid-state physics at the Paul Scherrer Institut in Switzerland and the Technische Universität München (TUM) in Germany, where he graduated summa cum laude. He was a Feodor-Lynen postdoctoral fellow of the prestigious German Alexander von Humboldt Foundation at the University of California, San Diego in the group of Brian Maple, where he acquired experience in high-quality single crystal synthesis. Since 2011, Janoschek has been the capability leader for neutron scattering in the Los Alamos MPA-CMMS group.

About the Wolfram-Prandl Prize

The award is named after the German neutron scattering pioneer Professor Wolfram Prandl, who developed modern neutron scattering methods and high-level numerical data analysis. The German Committee for Research with Neutrons (KFN) presents this award, which includes a cash prize, every two years to outstanding early-career scientists. The award typically emphasizes research enabled by innovative neutron scattering method developments.